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APPLICANTS: Jing W. Jiang, Xiaojun Fang, Robert J. Deri, and  
Lawrence J. Pelz

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**PRELIMINARY AMENDMENT**

SIR:

Prior to examination, please amend the above-referenced application as indicated below:

## IN THE CLAIMS

1           1.       A method of selecting signals to transfer between a head transponder  
2 and tail transponder, the method comprising the acts of:  
3           tuning an applied bit rate window of a head transponder to a predetermined  
4           frequency;  
5           receiving a request at the head transponder to change the bit rate window;  
6           at the head transponder, generating a communications signal having a bit rate  
7           of the predetermined frequency;  
8           at the head transponder, inserting a command into the communications signal,  
9           wherein the command states to establish a new bit rate window;  
10          at the head transponder, transmitting the communications signal to a  
11          downstream element; and  
12          at the head transponder, transferring payload of incoming signals having a bit  
13          rate within the bit rate window.

1           2.       The method of Claim 1, further comprising the acts of:  
2           receiving the communications signal at the tail transponder;  
3           detecting a change in input bit rate at the tail transponder;  
4           at the tail transponder, generating a response signal having a similar bit  
5           rate as the communications signal;  
6           at the tail transponder, inserting a command into the response signal  
7           indicating receipt of a command to set a new bit rate window; and  
8           at the tail transponder, transferring to the head transponder a payload of  
9           signals having a bit rate within the bit rate window.

1           3.       The method of Claim 1, further comprising the acts of:  
2           at the head transponder, performing bit rate verification on incoming  
3           signals; and  
4           at the head transponder, transferring the payload of signals having a bit  
5           rate within the new bit rate window.

1           4.       The method of Claim 2, further comprising the acts of:  
2                   at the tail transponder, performing bit rate verification on incoming  
3                   signals; and  
4                   at the tail transponder, transferring the payload of signals having a bit rate  
5                   within the new bit rate window.

1           5.       The method of Claim 1, wherein the signals are transmitted over a  
2                   passive optical network (PON), which is a communication fabric comprising optical  
3                   fiber connected in a tree topology.

1           6.       The method of Claim 1, wherein the signals are transmitted over a  
2                   passive optical network (PON), which is a communication fabric comprising optical  
3                   fiber connected in a star topology.

1           7.       The method of Claim 1, further comprising performing FEC encoding  
2                   on incoming signals at the head transponder.

1           8.       The method of Claim 1, further comprising performing FEC decoding  
2                   on incoming signals at the head transponder.

1           9.       The method of Claim 2, further comprising performing FEC encoding  
2                   on incoming signals at the tail transponder.

1           10.      The method of Claim 2, further comprising performing FEC decoding  
2                   on incoming signals at the tail transponder.

3           11.      The method of Claim 1, further comprising the acts of:  
4                   performing bit rate verification on the incoming signals at the head  
5                   transponder; and  
6                   at the head transponder, transferring the payload of signals having a bit  
7                   rate within the new bit rate window.



1           15.   (New) The transponder of Claim 13, wherein the message instructs  
2   the at least one downstream network element to establish a bit rate window.

1           16.   (New) The transponder of Claim 13, wherein the CPU is coupled to  
2   control the bit rate window of the CDR.

1           17.   (New) The transponder of Claim 16, wherein the CPU programs the  
2   bit rate window of the CDR in response to a command external to the transponder  
3   that indicates to change the transponder bit rate window.

1           18.   (New) The transponder of Claim 13, wherein the at least one  
2   downstream network element transmits to the transponder a signal having the same  
3   frequency as the communications signal and acknowledges the receipt of the message  
4   from the transponder.

1           19.   (New) The transponder of Claim 13, wherein the framing device  
2   further comprises:  
3           a processor device coupled to receive the transferred signal from the  
4               MUX, wherein the processor device recognizes messages  
5               embedded in the transferred signal and outputs the messages to the  
6               CPU; and  
7           a clock counter coupled to receive the transferred signal from the MUX,  
8               wherein the clock counter counts the bit rate of the transferred  
9               signal and outputs the bit rate to the CPU.

1           20.   (New) The transponder of Claim 13, wherein  
2           the framing device comprises a switch coupled to receive the transferred  
3               signal from the MUX and that selectively outputs the transferred  
4               signal to the transmitter and wherein  
5               the CPU commands the switch to transfer a data payload  
6               portion of the transferred signal to the transmitter if the counted

7 bit rate is within the programmed bit rate window of the  
8 transponder.

1 21. (New) A transponder coupled to receive inbound signals from at least  
2 one upstream network element and those outbound signals from at least one  
3 downstream network element, wherein the inbound signals include messages from the  
4 at least one upstream network element, the transponder comprising:

5 a clock and data recovery unit ("CDR") coupled to receive the inbound  
6 signal, wherein a bit rate window of the CDR is programmable and  
7 wherein the CDR determines whether the bit rate of the inbound  
8 signal is within the bit rate window;

9 a communications signal generator that generates a first communications  
10 signal;

11 a multiplexer ("MUX") coupled to receive the first communications signal  
12 from the communications signal generator and coupled to receive  
13 the outbound signal and that transfers either the first  
14 communications signal or the outbound signal (hereafter  
15 "transferred signal" refers to either the first communications signal  
16 or the outbound signal);

17 a central processing unit ("CPU") coupled to the MUX and that controls  
18 which signal the MUX transfers and that is further coupled to the  
19 CDR to program the bit rate window;

20 a framing device coupled to receive the transferred signal from the MUX  
21 and the inbound signal from the CDR, wherein the framing device  
22 detects messages embedded in the inbound signal; and

23 a transmitter coupled to receive the transferred signal from the framing  
24 device and that transmits such transferred signal to the at least one  
25 upstream network element; wherein

26 if CDR detects the bit rate of the inbound signal is not within a  
27 programmed bit rate window, the CPU commands the CDR to

28 change its bit rate window to include a communications  
29 frequency.

1 22. (New) The transponder of Claim 21, wherein  
2 the MUX transfers the first communications signal to the framing device,  
3 wherein the first communications signal is a similar frequency as  
4 the inbound signal;  
5 the framing device embeds a message into the first communications signal  
6 that acknowledges receipt of the inbound signal; and  
7 the transmitter transfers the first communications signal to the at least one  
8 upstream network element.

1 23. (New) The transponder of Claim 21, wherein:  
2 the transponder receives a second communications signal from the at least  
3 one upstream network element having a message embedded that  
4 specifies a new bit rate window to apply;  
5 the framing device recognizes the message embedded in the second  
6 communications signal and outputs the message to the CPU,  
7 wherein the message specifies a new bit rate window for the  
8 transponder to apply; and  
9 the CPU commands the CDR to change its bit rate window to that  
10 specified in the message.

1 24. (New) The transponder of Claim 21, wherein the framing device  
2 further comprises:  
3 a processor device coupled to receive the first communications signal from  
4 the MUX and further coupled to receive the inbound signal from  
5 the at least one upstream network element, wherein the processor  
6 device embeds messages into the first communications signal in  
7 response to commands from the CPU and wherein the processor  
8 device recognizes the message embedded in the second  
9 communications signal and outputs the message to the CPU; and

10 an encoder device coupled to receive the first communications signal from  
11 the MUX and coupled to receive messages from the processor  
12 device, wherein the encoder device embeds the messages from the  
13 processor device into the first communications signal.

1 25. (New) The transponder of Claim 21, wherein  
2 the framing device comprises a switch coupled to receive the transferred  
3 signal from the MUX and that selectively transfers the transferred  
4 signal to the transmitter and wherein  
5 the clock counter transfers a counted bit rate of the transferred signal to  
6 the CPU;  
7 the CPU commands the switch to transfer a data payload portion of the  
8 transferred signal to the transmitter if the counted bit rate is within  
9 the bit rate window.

1 26. (New) The transponder of Claim 24, wherein the message allows for  
2 the transponder to communicate with the at least one upstream network element.




REMARKS

Claims 13-26 are newly added and should be considered in the initial examination. Claims 13-26 are supported in the specification for example in FIGs. 3A and 3B.

Respectfully submitted,  
Jing W. Jiang, *et al.*

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By:   
Glen B. Choi, Reg. No. 43,546  
Attorney for Applicants  
FENWICK & WEST LLP  
Two Palo Alto Square  
Palo Alto, CA 94306  
Tel.: (415) 875-2301  
Fax: (415) 281-1350

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